

REMARKS

The examiner has issued a final rejection of all of the claims of the application based upon the same references that were used in the previous rejection, namely the Parady patent or the Joy patent, taken alone or in combination with up to four other references selected from the article to Kruse et al or the patents to Flynn, Lee et al, Anderson et al and Cutler et al. Applicants continue to submit that the basis for these rejections is unfounded that that the examiner should withdraw the final rejection and allow the claims still in the application.

Claims 2, 11 and 12 are objected to because of certain informalities. These have now been overcome, either by amendment or cancellation of the claim in question.

The examiner has maintained the grounds for the rejections that were first outlined in the office action dated September 16, 2004 and responded to in the amendment dated March 9, 2005.

Turning now to the first maintained rejection, the examiner contends that claims 11-16 and 19-23 are anticipated by the teachings of the Parady patent, U.S. 5,933,627. Applicants respectfully submit that the Parady patent fails to show the following features of claim 11 as now amended.

a) The patent describes the use of multiple threads to access data. However, the patent does not appear to teach or suggest queuing the threads to have overlapping access to the accessible data. Although the examiner refers to Fig. 3, he states that “.. when threads are switched, they have overlapping access to data....” Yet, applicants cannot understand how the examiner reached this conclusion based on the text of the patent. Clarification is requested.

Claims 12 and 14 have been folded into claim 11 to reduce the number of issues to be discussed. These two dependent claims had specified the two events that are to be considered in dealing with an execution interrupt. The examiner takes exception to the terms to 'short latency event' and 'long latency event'. Applicants refer to page 4 of their specification wherein the duration of a 'short' event is one of 25 machine cycles or less, whereas a 'long' event is over 25 cycles. The precise dividing line between the two events is not as significant as the method of dealing in a different manner with each event. Furthermore, Parady does not recognize the occurrence of the two different events (long latency vs. short latency) or the method of dealing with each of them in a different manner. As stated by the examiner on page 4 of the office action, Parady has further taught that the thread execution control includes control logic for temporarily transferring the control to the next thread when execution stalls due to a short latency event, and for returning control to an original thread when the latency event is completed." Then, three lines later, he reiterates "...control will eventually be transferred back to the first thread." Thus, Parady is talking about latency events wherein the control is returned to the first thread under all circumstances whereas in claim 11, applicants clearly point out that long latency events cause full control to be passed onto and retained by the next thread. Accordingly, claim 11 as now amended shows that control does not necessarily return to the first thread.

Furthermore, the applicants have amended claim 11 to explicitly state that control is returned to the first thread immediately upon completion of a short latency event.

Although the examiner refers to a cache miss as a short latency event, it should be noted that Parady teaches a cache miss as a long latency event (see Abstract).

Applicants further point out that in Parady, the multiple threads are pieces of the same program rather than independent processes. Yet, in claim 11, applicants specifically refer to the multiple instruction execution threads as independent processes in a sequential time frame.

Applicants respectfully submit that claim 11 as now presented clearly distinguishes over the cited and applied Parady patent. Claims 12 and 14 have been canceled. With claim 11 containing allowable subject matter, claims 13 and 15-23, all depending from claim 11, should be considered allowable as well.

It is well recognized that the cited prior art is anticipatory only if every element of the claimed invention is disclosed in a single item of prior art in the form literally defined in the claim. Jamesbury Corp. v. Litton Indus. Products, 756 F.2d 1556, 225 USPQ 253 (Fed. Cir. 1985); Atlas Powder Co. v. du Pont, 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984); American Hospital Supply v. Travenol Labs, 745 F.2d 1, 223 USPQ 577 (Fed. Cir. 1984). Applicants respectfully submit that Parady does not meet all of the limitations of the newly worded independent claim 11 and, consequently, does not anticipate claims 13 and 15 – 23 that depend from claim 11. Accordingly, reconsideration and withdrawal of the final rejection of these claims is appropriate.

The rejection of claims 1-6, 9-10 and 32-33 as unpatentable over Parady in view of the 1999 article by Kruse et al under 35 U.S. C. 103(a) is respectfully traversed. Again, as stated previously in connection with the patentability of claim 11, applicants have included the subject matter of claims 2 and 4 into claim 1 to include the additional step of either returning control when the stall is due to a short event or keeping control if the event is long. This then serves to clearly distinguish over Parady. The debate over short versus long event is irrelevant to the teachings of the present invention because Parady does not draw any

distinction between the operation of the Parady system for a short event or for a long event. Furthermore, it is important to note that Parady does not specify that providing multiple instruction execution threads represents independent processes as indicated by the examiner. Instead, these processes are interrelated. This is because they are pieces of the same program and are not independent. Applicants, in their March 9, 2005 amendment, have presented compelling arguments showing a failure to suggest a motivation to combine these references.

Of additional significance is the insistence by the examiner that control is eventually transferred back to the first thread, as stated by Parady. Yet, one of the distinguishing features of claim 1 as now amended is that full control is passed to the subsequent thread in the case of a long event. Thus, applicants' invention does not contemplate the return of control to the first thread in situations in which the stall is a long event. Therefore, the very argument being used by the examiner in fact distinguished the claimed invention from the teachings of Parady. Applicants respectfully submit that the knowledge of the invention, when viewed from the standpoint of one of ordinary skill in the art with knowledge, when no prior art reference or references of record convey or suggest that knowledge, is "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." See W. L. Gore & Associates, Inc. v Garlock, Inc., 721 F.2d 1540, 1553; 220 USPQ 303, 312-313 (Fed. Cir. 1983).

The weight of the evidence clearly points to features in claim 1 that patentably distinguish over the prior art. Accordingly, the final rejection of claim 1 should be withdrawn. The remaining claims that depend from claim 1, namely claim 3 and claims 5-10, provide further limitations on the scope of coverage and should likewise be reconsidered and

allowed. Claims 32 and 33 have now been amended to depend from claim 1 rather than from claims 2 and 4, and should also be considered allowable for the same reasons as claim 1.

For an obviousness rejection, it is not enough that one may modify a reference in view of a second reference, but rather it is required that the second reference suggest modification of the first reference and not merely provide the capability of modifying the first reference. Applicants respectfully submit that such a suggestion has not been presented in the combined teachings of Parady in view of Kruse et al. The law is quite clear that in order for a claimed invention to be rejected on obviousness, the prior art must suggest the modifications sought to be patented; In re Gordon, 221 U.S.P.Q. 1125, 1127 (CAFC 1984); ACS Hospital System, Inc. v. Montefiore Hospital, 221 U.S.P.Q. 929, 933 (CAFC 1984). The foregoing principle of law has been followed in Aqua-Aerobic Systems, Inc. v. Richards of Rockford, Inc., 1 U.S.P.Q. 2d, 1945 (D.C. Illinois 1986). In the Aqua-Aerobic's case, the Court stated that the fact that a prior reference can be modified to show the claimed invention does not make the modification obvious unless the prior reference suggests the desirability of the modification. The CAFC in the case of In re Gorman, 18 U.S.P.Q. 2d (CAFC 1991) held at page 1888:

When it is necessary to select elements of various teachings in order to form the claimed invention, we ascertain whether there is any suggestion or motivation in the prior art to make the selection made by the applicant [citation omitted]. 'Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination [citations]....

The references themselves must provide some teaching whereby the applicant's combination would have been obvious.

Further, the CAFC, in In re Oetiker, 24 U.S.P.Q. 2nd 1443, 1445 (CAFC 1992) held:

There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge cannot come from the applicant's invention itself.

Most significantly, the CAFC in the case of In re Dembiczak, 50 U.S.P.Q.2nd 1614 (CAFC 1999) held at 1617:

...(examiner can satisfy burden of obviousness in light of combination 'only by showing some objective teaching [leading to the combination]');

Thus, it is clear that where an individual reference does not teach the entire invention, then the modification which the invention represents must be suggested and motivated by some other reference through some objective teaching and cannot come from the application itself. Applicants respectfully submit that the teachings of the applied prior art are not persuasive of such a teaching. Accordingly, the rejection of claims 1-6, 9 -10 and 32-33 should be withdrawn. Again, the examiner's attention is also directed to the March 9, 2005 amendment for additional support for applicants' belief that these claims contain patentable subject matter that is patentably distinguishable over the combined prior art presented by the examiner.

Reconsideration of the final rejection of claims 27-29 and 31 is respectfully requested. Applicants call attention to the arguments that they presented in the most recent amendment and respectfully submit that these points are still well taken. Furthermore, in light of the amendment to independent claim 27, these four claims should be deemed to be allowable. According to the definition provided by Kruse and Ryba of a priority queue consisting of "entries, each of which contains a key called the priority of the entry", a priority queue has only two operations...

1. Insert an entry
2. Remove the entry having the largest (or smallest) key

Clearly, claim 27 as now written differentiates the FIFO buffer of the present invention from the "priority queue" of the prior art. In addition, following the helpful suggestion of the

examiner on page 37 of the office action, claim 27 now includes claim language which expands on the functionality of the priority FIFO buffer, thereby clearly distinguishing the subject matter over the applied prior art. Along with allowance of this independent claim, follows the allowance of claims 29 and 31. Further support for their allowability is the argument made by the applicants in the March 9, 2005 amendment.

CONCLUSION

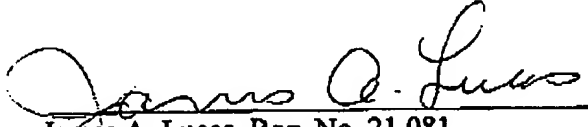
The inescapable conclusion of this final rejection is that the examiner has failed to establish a lack of patentability of claims 11-16 and 19-23 over the Parady reference by itself, and the remaining claims over the combination of Parady or Joy in view of several other references. Accordingly, it would be proper and fitting for the final rejection to be withdrawn and a notice of allowance issued.

In any event, applicants respectfully request entry of this amendment inasmuch as it reduces the number of independent claims by two and cancels seven dependent claims, thereby greatly simplifying the issues on appeal.

Respectfully submitted,

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